



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,747	07/13/2001	Yoshinari Miyamoto	211372US0X	2039

22850 7590 07/25/2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

OLTMANS, ANDREW L

ART UNIT PAPER NUMBER

1742

DATE MAILED: 07/25/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/903,747

Applicant(s)

MIYAMOTO ET AL.

Examiner

Andrew L Oltmans

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-15 is/are pending in the application.
- 4a) Of the above claim(s) 13 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 14 and 16-22 is/are allowed.
- 6) ☒ Claim(s) 1, 3-7, 9-11 and 15 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☒ Claim(s) 1-7 and 9-15 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

1. This application contains claim 13 drawn to an invention nonelected with traverse in Paper No. 9, filed October 31, 2002. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

#### *Claussen et al. 6,051,277*

3. Claims 1, 3-7, 9-11 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Claussen et al. 6,051,277 (Claussen).

Claussen teaches a method of forming a coating layer of an intermetallic compound on a base material, wherein the method includes the steps of piling up a first substance on the base material, as recited in claim 1 (col 5):

Art Unit: 1742

The green compact or precursor can, however, also be built up in layers on a basic part, for example by immersing the basic part in a powder suspension (dip-coating), by 55 spraying on the suspension or by using coating techniques such as thermal or plasma spraying. In this case the powder suspension is prepared by suspending the ground starting materials for production of the green compact in an aqueous or organic solvent. According to this embodiment of the 60

[emphasis added by examiner]

a second substance is delivered onto the first substrate and the first and second substance are reacted in order to form a coating layer comprising an intermetallic compound, as recited in claims 1 and 11 (col 6):

The green compact or precursor prepared in the manner described is then brought into contact with molten alu-  
20 minium or a molten aluminium alloy until it is completely or, at least in the surface region, partly converted into  $Al_2O_3$  and aluminides. Suitable temperatures range from 660 to 1300° C., preferably being between 750 and 1100° C. The

[emphasis added by examiner]

With respect to claim 3, the claimed layer does not distinguish over the fused built up layers on the green compact or precursor taught by Claussen (col 5, lines 53-56 and col 7, lines 13-63).

With respect to claims 4, 9 and 10, Claussen teaches that the first substance is in powder form and may include oxide, carbide, nitride or boride of Ni, Co, Fe, Nb, V, Mo, W, Cr or Ta, as instantly claimed (col 4, lines 42-63 and col 5, lines 5-10 and 22-26). With respect to claim 5, Claussen teaches that the second substance is a molten aluminum (col 6, lines 18-22). With respect to claims 6 and 7, the base material (i.e. the green compact or precursor) constitutes Al in the form of  $AlO_3$ , iron, nickel, cobalt or niobium (col 4, line 35 and lines 42-44). The claims do not distinguish over the teachings of Claussen.

*Allowable Subject Matter*

4. Claims 2, 14 and 16-22 are allowed.
5. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
  - a. Instant claims 2, 14 and 16-22 are allowable over the prior art because the prior art fails to teach or suggest, either alone or in combination, the instantly claimed method of welding a plurality of base materials to each other with an intermetallic compound, wherein the method includes the claimed step of reacting the second substance with the first substance to cause the plurality of base material to be bonded to each other through a coating layer of an intermetallic compound.
  - b. Instant claim 12 would be allowable over the prior art because the prior art fails to teach or suggest, either alone or in combination, the instantly claimed method of preparing a three-dimensional molding with the use of a computerized control system, wherein the method includes the steps wherein an intermetallic compound is formed and then performing additional steps wherein another layer of intermetallic compound is formed on another portion of the base material.

*Response to Arguments*

6. Applicant's arguments filed May 13, 2003 have been fully considered but they are not persuasive. Instant claims 1-7 and 9-22 remain pending in this application. Claim 13 has been

Art Unit: 1742

withdrawn for being drawn to a nonelected invention. In view of applicant's amendments, the rejection under 35 USC 102(b) over Rafferty has been withdrawn. However, the rejection under 35 USC 102(b) over Claussen has been maintained.

7. With respect to the argument that Claussen fails to teach the claimed invention, the argument is not found persuasive. As recited in the rejection set forth in the previous Office Action, Claussen teaches a first substance, which is taught as including a powder comprising metal (col 5, line 55), piled on the surface, wherein the coated substrate is then contacted with a molten metal material (col 6, lines 19-20), e.g. instant claim 1. Applicant argues that both the first and second substances are not metals. The examiner disagrees. The first substance includes "metallic phases", which are metals, as recited in claim 1 (col 4, lines 17-63). It is further noted that Claussen also teaches that "[n]on-oxidic compounds or elements which react with molten aluminum to form aluminides can also be added to the powder mixtures used for making the green compact or precursor (col 5, lines 30-34). The second substance is molten metal, which is also metal (col 6, lines 19-20). Although the first substance contains oxide, the claims do not preclude the presence of oxide. The formation of intermetallic compounds (e.g. aluminide) are not exclusively formed by the mechanism argued by applicant, but also include formation from non-oxidic compounds and elements (col 5, lines 30-34). Further, the claims are not limited to a metal-to-metal reaction to form the intermetallic. The claims merely recite that the "second substance [which comprises metal] reacted with the first substance [which comprises metal] to thereby form a coating layer of an intermetallic compound on the base material" (claim 1). Therefore, the argument regarding the reaction mechanism is not persuasive. In view of all of the above, the arguments are not found persuasive.

Art Unit: 1742

*Conclusion*

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Oltmans whose telephone number is 703-308-2594. The examiner can normally be reached 7:00-3:30 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

*ALO*

ALO

July 19, 2003

*John P. Sheehan*

John P. Sheehan  
Primary Examiner  
Art Unit 1742